

NATIONAL ELK

NARRATIVE REPORT

JANUARY-DECEMBER 1964

Division of Wildlife Refuges

Narrative Report Routing Slip

Refuge NATIONAL ELK Year 1964

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NATIONAL ELK REFUGE  
ANNUAL NARRATIVE REPORT

1964

UNITED STATES DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE  
BUREAU OF SPORT FISHERIES AND WILDLIFE  
JACKSON, WYOMING



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## NATIONAL ELK REFUGE

September, October, November, December

1964

### I. GENERAL

#### A. Weather Conditions

The weather report is gleaned from records collected by the Teton National Forest at their weather station, one-half mile northwest of the refuge headquarters:

	<u>Precipitation</u>	<u>Max. Snow on ground</u>	<u>Minimum Temperature</u>	<u>Maximum Temperature</u>
January	1.23	15	-32	40
February	.31	6.3	-25	42
March	1.28	24.2	-18	44
April	.86	8.25	11	66
May	2.37	4	18	80
June	3.39		27	84.5
July	1.31		35	87.5
August	.91		21	86
September	Trace		15	77
October	.75		07	75
November	1.65	9.0	05	54
December	5.69	8.0	-32	43
Totals	20.01	68.45	-32°	87.5°

The total precipitation for the calendar year 20.01 inches is 136% ~~normal~~ normal. The long time average for this portion of Jackson's Hole is 14.83 inches. The 1963 calendar year was also a wet one with 20.31 inches of precipitation.

The snowfall for the first four months of this year stacked considerable snow, equivalent to 7.28 inches of moisture in the high country, the water content of this snow blanket for an average year is 4.47 inches. This water storage in <sup>the</sup> form of snow assured the refuge of an adequate supply of water for our summer's irrigation. In addition May and June produced a whopping 5.76 inches of moisture. All in all it was a cracking good season especially for the upland grazing areas.

Oddly enough, following a growing season blessed with an abundance of rain, not enough moisture fell in September for the local weather station to even record a figure. This is unusual and they had to settle for a "T" as no measureable precipitation fell during the entire month. October had little moisture, but enough to reduce the fire danger while November recorded the first snow cover. Over a foot of snow fell during December, but strong winds blew practically all of it off the lower or southern portions of the refuge. During Christmas week, nightly temperatures climbed to between 35° to 40° accompanied by rain. The rain melted almost all of the refuge snow cover, added to the run-off and created a flooding condition. Water backed up and turned the lower refuge into a lake a half mile wide and a mile long. Gradually this bled off and by the end of the month things were back to normal.

B. Habitat Conditions

This past spring and early summer the upland plants, invigorated by the fine growing season last year, really took off in high gear. Especially noticeable was the grass growth on the Poverty Flat unit, a near two square mile area of sparsely vegetated, poor soils upland area. By late June this normally barren expanse and the appearance of a hay meadow. Western wheat grass, crested wheat grass and downy brome gave the area a rank, "I-can't-remember-when", appearance. Although precipitation tapered off in July, adequate ground moisture kept refuge slopes green into mid-month and the more moist sections remained lush and green into August. The increased vegetative growth was very noticeable over the entire refuge and we entered the fall with an abundance of range type grazing available for early migratory elk.

The heavy cover resulting from this fine growing season presented a very potential fire danger, but fortunately no fires started on the refuge (despite 5 weeks of permit hunting for elk occurring during the period). The refuge didn't get away scott-free, however, for two fires started in the town of Jackson (one by the Fire Department in burning off a vacant lot) burned across adjacent lots and into the refuge. Prompt action by refuge personnel with assistance from the Jackson Fire Department, Forest Service, Wyoming Game & Fish and Jackson Federal Fish Hatchery confined the two burns to but 50 acres of forage and 1000 round hay bales.



## II. WILDLIFE

### A. Migratory Birds

#### Trumpeter Swan:

A flock of up to 29 Trumpeter Swans wintered here with the peak number occurring in January. During the time Flat Creek was frozen over and while the swan were confined to Miller and Winegartner Springs, supplemental feeding of grain was carried on. As soon as open water appeared the large birds moved back to their natural feed. As other waters opened up the birds gradually moved off the refuge - with our population (summer) dropping to six individuals. Two Trumpeters nests were tentatively located. The pair in Flat Creek marsh did not produce, but the pair in Romney Pond came off with four vigorous cygnets. All four of these survived until they were the size of a Canada goose and then one met with some mishap. This was in late August. As fall approached the annual buildup of refuge Trumpeter numbers began. In early October there were 24 swan on the lower refuge marsh. The swan population upped to 44 on the 29th. and peaked at 57 birds (includes 3 cygnets) in mid-November. This figure is down from our all-time high of last year when 101 Trumpeters (87 adults, 14 cygnets) were tallied in mid-November. As is normal the birds this fall were concentrated in the first half-mile of the marsh right against the north highway. They provided a great deal pleasure to the passing tourists as well as to many locals who made use of the convenient highway observation turn-out at this point. Numerous car loads of folks stopped to watch the noisy and active display these giant snow white waterfowl put on. Pandemonium reined and the shutter-bugs had a field day. After a boisterous ten days the swan continued their normal migration to wintering areas and the refuge wintering flock dropped to 22 birds.

#### Whistling Swan:

A Wyoming Game & Fish warden delivered three live Whistling Swan to the refuge April 17. These birds had been rescued by civilians from an oil sump at Sinclair, Wyoming. They were washed with detergents to remove the crude oil, but it removed all natural oils as well, so the birds were "sinkers" when we got them. They were held here three weeks until they had preened boyancy back into their feathers. The birds were banded and released on the refuge. Oddly enough as the birds were released a coyote caught one before it could get the one-fourth mile to Flat Creek, but prompt action made the coyote release his prey and the swan continued on.

### Canada Geese:

The year began with a token flock of a dozen Canadas using our small amount of open water. These moved out in early January despite the availability of grain resulting from feeding the Trumpeter swan flock. On March 16 the first migrants began to filter back through Jackson Hole with the arrival of 12 birds. By the end of the month 46 geese were present and scattered over the elk feed grounds mostly in pairs (19 pairs promenading among the elk). Peak spring numbers occurred the first week of May with 60 birds present. Some nesting took place on the refuge, four pairs produced 12 goslings.

Fall peak goose numbers concurred with the opening of waterfowl season October 10 and peaked at 140 birds. Despite relatively fewer numbers of geese on the refuge this fall the honker-hunters in Jackson Hole scored better than average on the Canadas. It appears the feeding-resting pattern has changed, the geese ranging northward into Teton Park instead of frequenting refuge waters. Especially productive goose hunting was had by those who braved the snow and disagreeable weather the last two weeks of the December season. During this period refuge numbers were no more than 25 birds at any time. The Christmas bird count came up with but four Canadas being observed on the refuge.

### Ducks:

A few ducks remained on the refuge in mid-winter frequenting the two warm springs where surplus wheat was being fed to the Trumpeter swan flock. The grain was spread in deeper water to make it as difficult as possible for the quackers to get, yet readily available to the swan. Despite this, the puddlers got their share of it. Often after the Monday, Wednesday, Thursday grain was distributed a few Common and Barrows Goldeneyes would move in with the puddlers for a change-of-pace meal. The total number of all chowline - following quackers numbered no more than 400 when the swan feeding began in early January and 1000 on March 11 when Flat Creek opened up and grain feeding was terminated. The peak spring duck population occurred during the first week of April with 1100 scattered over refuge waters. This dropped to the summer resident flock of 200 adult birds.

Censusing by Student Trainee Gerald Grau showed 80% of these summering birds as Mallards; the remainder equally divided between Gadwalls, Greenwinged Teal, Goldeneyes and a few Cinnamon Teal. Total production this season - 449 ducks.

The fall build-up reached a peak (1200) in mid-October with the advent of the duck hunting season. By the close of the year this number had halved with 600 joining the Trumpeters at the grain feeding stations in December.

Local duck stamp sales in Jackson Hole tallied 343 - down slightly from last years 350, but was still higher than our short term (9 year) average of 312 stamps per year.

B. Other Birds

Sandhill Cranes:

Movement began on April 2. On this date 12 were sighted in the Nowlin Creek unit. Summer population dropped to two pair. One of these pairs hatched one young which they lost and the remaining pair brought off two youngsters and were successful in raising both.

One American Bittern was seen at Miller Spring in early July. The Great Blue Heron was present in his usual low numbers, frequenting at times Nowlin Pond where the Federal Hatchery has a nice stock of brood Cutthroat trout. Soras were seen occassionally with no significant population change. The Curlew numbers were low this summer with only one pair located near Miller Spring. A new bird was added to the bird list when the Manager identified a lone Mountain Plover on Poverty Flat on June 18.

C. Upland Game Birds

Sagehen observations were up. The following sightings were made this year:

January 28	30 adults	Chambers elk feed ground
May 25	8 adults	Ritter Plain
June 23	Hen W/4 Chicks	North gap (see photo section)
December 19	95 adults	McBride unit
December 25	35 adults	Ritter Plain



In mid-May a Blue Grouse was seen near Romney Pond and on August 4 a hen with three young was observed while on a trip through this same general area.

Mourning Dove observations were normal for the year with not more than three birds seen on any given field trip, except for one unusual concentration of 14 doves tallied at Romney Pond on July 7.

Other Birds:

The following "early bird" observations were recorded:

<u>Date</u>	<u>Bird</u>	<u>Remarks</u>
January 28	Grey-crowned Rosy Finch	8
	Red-shafted Flicker	1 10 <sup>0</sup> below last night.
	Bohemian Waxwing	27 Eating pips from head-quarters rose bushes.
February 5	Robin	2 Seen at headquarters.
" 21	Bohemian Waxwings	Headquarters area.
March 17	1st Redwinged Blackbirds of season.	Along Nowlin Creek.
" 23	Pink-sided Junco	6
" 23	Horned Lark	300
" 25	Redwinged Blackbirds	(Males) in numbers.
" 30	Meadow Larks	3
" 30	Mt. Bluebird	6
" 30	Robins	7 Headquarters lawn.
" 31	Western Crows	20
April 1	Killdeer	1 Miller Spring.
" 10	Tree Swallows	7 Much snow yet!
June 18	Night Hawks returned	Always arrive late.

D. Big Game Animals

Elk:

When this reporting period began the feeding of the wintering elk herd had just gotten underway -- January 2.

The first elk feeding, started in the vicinity of the elk trap, primarily so the neck banding program could be started. This immediately brought in 2800 of the 7000 elk on the refuge. The "neck tie" operation was undertaken early in the winter for at this time the elk are in better condition to be run through the corrals and take handling much better. The tagging went exceptionally well and the 500 quota was exceeded by 297 head. In less than a month 797 elk were outfitted with the 2½" wide white woven plastic neck bands. Everyone was pleased with the operation.

The over-all condition of the tagged elk was excellent and all of the tagging crew remarked on the large size of this years calves. Heavier calves also was reported by the local locker plant; due, we feel, to the better than average range conditions that prevailed this summer and fall. Calves were so large that tagging crews reported difficulty in distinguishing calves from yearlings even with the critters in the tagging chute.

In summary, about one out of ten of the winter herd was tagged with the white neck tie. When seen in the summer ranges, this white band identifies the animal as one that wintered on the "government ranch in '64. Other colored bands are used to identify elk wintering on the other Jackson Hole feed grounds. This program of neck banding was initiated through the efforts of the Jackson Hole Cooperative Elk Study group with banding also done in Yellowstone Park, near Cody, Wyoming and other adjacent areas in this north-western corner of Wyoming. The study program has been successful in determining through the band colors just where the wintering herds summer and intermingle on the summer ranges.

A second feed ground was started the second week of January and on the 14th a classification count was made on the 6,688 elk on the two feed grounds. The break-down figures obtained were: Cows - 4054, mature bulls - 724, spikes - 316 and calves - 1594. The cows constituted 60% of this herd, mature bulls - 11%, spikes - 5% and calves - 24%. (This latter figure a bit higher than the average of past years). The calf - cow ratio was 39:100.



The following week (Jan. 16) a third feed ground was established on Poverty Flat as more elk continued to filter onto the refuge from the Sheep Mountain foothills. By February 1, field counts on the three feed grounds indicated more than 7500 head. Another herd and classification count was made Wednesday, February 26. This one tallied 7,916 head with 4867 of this number cows, 1775 - calves, 967 - large bulls and 307 - spikes. Of special interest, in each of the counts, two elk were observed sporting neck bands foreign to this refuge. A little checking revealed that these two strays were banded in the northern part of Yellowstone Park in February 1963. The Teton National Park biologist reported that two of this type of band were recovered from a cow elk shot in October on Teton's hunting Unit #1, just across the Gros Ventre from the Elk Refuge.

The winter in Jackson Hole in '64 was very real one with constant low temperatures and a good snow cover on the refuge. These conditions continued all through March but despite these wintry conditions by March 15 there was an unmistakable restlessness in the herd. They were ready to migrate north. The herds were difficult to keep on their respective feed grounds and 500 to 800 persisted in moving onto the near by bare (mostly windswept) ground on adjacent slopes each evening. Only, to trail back down to the feed grounds in the morning. This back and forth situation continued in varying degrees until the first of April, when finally the lower refuge areas were free of snow and south facing ridges showed patchy spots of bare ground. More of an elk drift began with 1100 to 1500 moving onto these baring slopes to forage, forsaking the hand out of high quality alfalfa-brome elk groceries. As more slopes came out from under the snow cover there was a steady movement away from the feed ground areas. Feeding of baled hay was still required though the remainder of the herd and often pulled upwards of 1000 head back onto the feed grounds from the marsh and near by slopes.

Our notes for this period of April read, "as the snow recedes elk leave the feed ground until only an estimated 1200 to 1500 full-time feeders remain on one feed ground. The snow on the 11th caused a reverse drift and our numbers of elk doubled overnight. We hope we can discontinue feeding by the 15th - - - weather permitting we still may be able to do so."

The seasons elk feeding program was ended on the 17th. The elk picture by this time showed the herd scattered with 5000 still on the refuge, but by April 24 the figure was down to 1200. Thereafter, followed a series of spring snow storms, each in turn, caused a reverse migration. It was a cold backward spring and as late as mid-May there were elk on the refuge bottoms varying from 1200 to 2000 head. Those that moved off the refuge just didn't have anywhere to go, as much of the north country was still socked in with snow. The elk movements on the refuge at this time caused much trampling of our rangelands now thawed by warming temperature and wet with melting snows. This is some of the hardest usage the refuge gets.

Finally with rising temperatures the elk began to leave. The elk-possee got underway on May 24. This now annual ride also helped to relieve the situation. This activity (see photo section) drawing many riders, was originally sparked (by the refuge) at a local Izaak Walton meeting. Many members anxious to do a bit of early spring horseback riding were enthused over the idea of hazing our "I-wanna-stay-all-summer" elk herd from the refuge. (Previous to this time this "cowboying" chore was done by refuge and State Game & Fish personnel). The Izaak Walton League affair now has become an interesting outing and much looked forward to. This elk hazing operation is also combined with a dandy pot-luck, eat-out afterwards. This spring 38 elk hazers appeared for the affair and while they moved our "Freddie the Freeloader" herd of elk; those left behind, mostly wives and youngsters prepared the elk burgers and sundry items of fare.

The eager horsemen started their ride at the west end of the Gros Ventre incline, spread out in sight of each other and rode abreast along the ridge eastward. Thus deployed, they were successful in hazing ahead of them the last of the refuge elk (some 800 - 1000 head) - - - except a few head that made an end run back into the bottoms.

Following the elk drive the "elk-possee" hurried back to the McBride area where their hunger pangs were eliminated by the generous repast placed before them by the many willing hands they left behind at the barbecue site. A good time was had by all besides performing a fine service for the Elk Refuge.

Immediately following the drive elk numbered less than 75 on the refuge. Gradually, though some of the hazed off herd eased back until our summering boarders numbered 300 - -



more than we expected. Shortly these unwanted wapiti were up to their same old tricks. They made a real nuisance of themselves all summer long by making nightly raids into our irrigated hay lands; feeding and trampling the hay until the stands could be cut and baled.

They were in for a rude surprise for on September 10 a special elk hunt was again opened on the refuge in an attempt to reduce and if possible eliminate this pestilent herd of summer parasites. The 20-permit-per-week, five week hunt reduced the herd by only 50 head (a 7 wound loss and 43 head kill). Hunting was hard. The hunting pressure during the first three days of the hunt caused the herd to move from the refuge except for a few that persisted in the Gros Ventre willow bottoms where they weren't too easily located. Some that moved eastward were, from reports, bagged on adjacent National Forest lands along Sheep Mountain. Likely, too, a few were potted on Teton Park when that season opened. All in all, the hunt to reduce this problem herd was not as successful as was hoped. Plans are to continue this hunt, but to change the opening date to coincide with the Teton Park opening. In this way when this nuisance herd moves off the refuge with our hunting pressure and into Teton Park it moves into their Unit #1 with 50 - T.N.P. elk hunters looking for a target. It is felt that a much better kill and probably a solution of our problem may be obtained in this manner.

The refuge permit hunt continued through October 15. This and the new zoning and hunting system set up on adjoining Teton Park helped reduce elk usage on the refuge during October. Primarily, hunting pressure in the two special permit units on the lower Teton Park caused elk to move west across Snake River to Jenny Lake flats, an undergrazed area within Teton Park. Before areas #1 and #2 of Teton Park was opened to hunting, the elk moved into this section of the Park and were on a route that carried them to the Elk Refuge without their being subject to any additional hunting. The hunting pressure exerted this fall was especially beneficial to the refuge for it kept elk back on unused rangelands and off the refuge during October, saving our grazing lands for November and December usage. This is desirable.

During November there was a gradual, but steady build up of elk numbers on the refuge with 2700 on the bottoms at the close of the month. Additional elk were scattered on adjacent

Slopes. By the end of December perhaps 8,000 head (4500 on refuge) were scattered in this portion of Jackson Hole ready to move onto the lower portion of the refuge when feeding of hay becomes necessary.

During the 1964 elk feeding period approximately 8000 head were maintained on the refuge -- (January 2 through April 17) -- some 107 days, a total of 79,315 bales of hay were fed. At 86.67 pounds per bale (average weight of bales put into storage during past three years), the total tonnage fed out this feeding period was 3,437 tons. When we began the elk feeding program there was 6,437 tons of hay in storage. Of this 1,137 tons was stored outside the hay sheds and was fed out first. At the close of the elk feeding period "arithmeticing" shows that we had an even 3,000 tons left in storage. All of this balance, then under shelter.

Elk losses on and adjacent to the feed grounds tallied 79 head. Of these, 40 were bulls lost principally to the scab mite, 20 were cows lost to over-age and three to scab necrotic stomatitis, gorings and predators.

One of the mature bull losses was unusual. Feeders noted two bulls half-heartedly sparing. The smaller, a 5 pointer casually turned to feed. At this point the larger lunged with head down, struck the smaller broadside knocking him flat. The fallen bull was unable to get back on to his feet and died about  $2\frac{1}{2}$  hours later.

A small well represented herd of elk was again maintained in the Elk Exhibition Pasture for the summer tourist. This roadside pasture along the Jackson - Yellowstone highway with its three convenient black-top turnouts stopped a good many of the near two million tourist who traveled this arterial pipeline to the two famous near by National Parks. (See photo section) A lot of film was expended on the eye-catching big antlered bulls (6) and spotted elk calves (3). The bulls and their antlers polished by August 30, so September and October vacationers had the added thrill of hearing and watching the herd conducting their normal mating activities.

Another bull was saved from an odd situation that would have very likely killed him. This particular fine 6 pointer



(western count) had collected several hundred feet of old barbed wire, rolled into a loose ball entangling both antlers. The weight with trailing ends required that he move with head lowered and pulled to one side. The wary rescue team equipped with a D-4 'Cat w/dozer blade and feed sled hazed until the weary bull stood his ground. The blade lowered on the ball of wire provided a convenient barricade to work from in cutting the wire loose. As the final wire was snipped the now cranky, very unhappy bull treed all personnel on top of the load of hay. This also included the 'Cat skinner, the snipper and the Refuge Manager. All coaxing with very choice flakes of alfalfa and maneuvering failed to get the irritated wapiti to move from the nook between the 'Cat and the front of the hay sled. After an hour and 20 minutes of efforts by the frozen frustrated rescuers to rescue, now themselves, a last resort action was voted in and it was successful. Two rounds from a .30 cal., Gibbs carefully placed through the antler, two inches above the skull caused the now dazed bull to move off a short distance from the sled. The 'Cat skinner promptly made a snappy run through the middle, hit the throttle and hauled the bevy of now tooth-rattling rescued rescuers to the warm up shack.

Oddities - Feeders reported seeing a cow elk with eight-inch velvet covered spike and again the large stage elk with the 12" - knobby velvet covered antlers.

#### Mule Deer:

Last winter Mulies moved onto Miller Butte on January 26. On this date 29 were scattered along the slopes of the east-side. The number peaked at 68 head on April 15 and shortly after this the herd scattered with only an occasional deer seen during the summer.

This fall, with snow stacking high during December in the upper country, deer moved down early. A whopping 91 head browsed on Miller Butte by Christmas time. One real trophy buck was noted lying on a high rocky outcropping on the butte on the 28th.

#### Moose:

There were many observations of these ungainly long-legged, choleric, techy, splenetic, unpredictable, but wily diabolical water loving creatures of nature.

The winter population about 35 head, holed up in the willow bottoms along the Gros Ventre River. There were more than the usual summer observations. Two young bulls, one large bull, a cow with single calf, a cow with twin calves and an assortment of single Moose used the refuge all summer and fall providing visitors with sight records at odd ball times and places. Places? Several, at times, browsed in willows clumps separated from town only by our 7' high big game fence.

#### Big Horn Sheep:

Mountain Sheep numbers last winter in the cliff country on the east boundry averaged about 35 head. These sheep moved back towards Sheep Mountain in May. Some reappeared late this fall in the same areas and in late December, 20 were counted. Wyoming Game & Fish men report a complete absence of lambs in this portion of the herd bordering the east refuge line. Attributing this lack of lambs to predation by coyotes.

#### E. Fur Animals, Predators, Rodents and Other Mammals

##### Coyotes:

Coyotes were numerous on the refuge starting in February. Elk feeding crews reported coyotes pulling down an ailing cow elk as early as January 17 and a calf elk on February 2. By the end of March most coyotes had moved out again. Two coyote dens were located in the lower refuge area on a Saturday afternoon scouting trip in May.

##### Coyote Mortality:

Several sick coyotes appeared around hay sheds last winter. Two of these sick animals were disposed of at the Quarters 5 feed ground. The head of one was sent to the State diagnostic Laboratory at Laramie as recommended by County Health Officer, Dr. Elmore, and local veterernarian Bill Johnson. The wired reply was: rabies negative.

One coyote took his own life when he tried to crawl under a low pipe frame gate; got his head stuck under same and choked to death.

The fall build up of coyotes on the refuge did not begin until December. On a mid-day trip to the upper refuge in

mid-December, 13 coyotes were talled, 7 of them at a calf elk carcass on Poverty Flat. Sign in the snow indicated a coyote kill.

There is a possibility that some small control may be exerted on the coyote population in areas adjacent to the refuge by the local rifleman. Coyote pelts are reportedly bringing \$6.00 to \$7.00 each.

Indications are that with increasing snow depth we can expect our normal high population level.

Badger:

No particular change in the badger population. Several single observations were made during the year. On July 18 an adult with a one-third grown kit was seen in Dry Hallow by Manager Dart, Marcus Nelson (R.O.) and Ackerknecht (Wash.).

Bear:

One Black Bear was seen in the Romney Ponds area on September 2.

White-Tailed Jack Rabbits:

These large rodents continue in the occassional observation classification. Scattered sign in the snow is about the only evidence we see of these nocturnal travelers.

Uinta Ground Squirrels:

On February 22, a Uinta was observed at the Huff hay shed during the elk feeding. This "loner" was seen off and on for several days. It is likely that he was unearthed from his hibernation-bedstead among hay bales by the elk feeders as it was not until April 4 that Uintas actually began to appear. The first young of the year were noted on June 12. These rodents, as usual, went into estivation early and by the first week of August most all had gone underground for the season. Populations appear static.

F. Predaceous Birds

Eagles:

The following eagle observations were compiled during the year:



<u>Date</u>	<u>Kind</u>	<u>Location, etc.</u>
2-5	1 - Golden	Chamber Cliffs
2-5	1 - Bald	Chamber Cliffs
2-5	1 - Bald	In gap feeding.
3-17	2 - Bald	In gap.
4-8	1 - Golden	Miller Butte
4-20	1 - Golden	Miller Butte
12-14	2 - Golden	Shop area.
12-28	2 - Golden	Miller Butte - perched.

In gleaning through the narratives for the past 10 years the following frequency rate on observations were tabulated:

<u>Date</u>	<u>Bald Eagles</u>	<u>Golden Eagles</u>
1954	3	10
1955	8	13
1956	10	12
1957	9	4
1958	4	10
1959	8	9
1960	10	16
1961	6	20
1962	4	11
1963	6	18
1964	5	11

Peak eagle numbers in recent years occurred in February 1953. This was the last time that any coyote control work was done on the refuge. When this choice eagle delicacy became available in the form of 80 or so clobbered coyote carcasses, the eagles really moved in. The influx of these large birds really got underway on February 15 and on the 25th, a total of 31 eagles were tallied on the refuge; 28 of these were Bald Eagles (included were 8 immatures). It seems odd that the Bald Eagle being piscivorous would find a coyote carcass so attractive. It has been known for some time that eagles are coyote fanciers, but it was surprising how quickly they moved in once these canine carcass became available. Many of the carcasses we did find were heavily fed upon. Nothing remained of the coyote except a head on one end of a long string of hide and a tail on the other. It was a fine display of eagles and these large meat eating birds had a ball.

#### Ravens:

Raven numbers were par for the year except for the fall period. During the winter 35 or so fed on elk carcasses.



The summer population was half of this with four pairs nesting in the lower refuge from where they harrassed nesting ducks at times. The fall brought and influx of ravens and numbers doubled to nearly a 100 birds. There were many, many more ravens than usual scattered through out the valley adjacent to the refuge.

Western Crow:

Observations are only occassional here so the following sightings are recorded: February 25 - seven, March 23 - one, March 31 - twenty.

Jackdaw:

Here in their usual numbers-40-50 individuals. A few of the local fishermen have begun to put the iridescent feathers of this bird to a useful purpose in the form of materials for trout flies, but no serious inroads is expected in the Magpie population.

Hawks:

Red-tail and Marsh hawks frequented the meadows in their usual numbers. As usual the Sparrow Hawks moved through in September. The only variation in the hawk population was in the Rough-leg numbers. More than the usual number of this handsome bird moved in during December. Due to the snow cover, he found mousing hard at times and even resorted to feeding on deer carcasses, a very infrequent behavior here.

Owls:

Two and possibly the remains of three Great Horned Owls were found by elk feeders at the Poverty Flat and Huff hay sheds last winter. Even though one was a fresh kill it was not possible to determine who the vanquisher was.

Great Horned Owls are still seen, but continue to remain in the uncommon status. One serenaded the headquarters area from a power pole perch on December 21. None of the other three owls species (Burrowing, Short-eared, Saw-whet) were seen during the year.

G.        Disease

Scabies continues to infect the herd with 95% of our bulls and about 19% of our cow losses resulting from this parasite. In recent years necrotic stomatitis has been a very insignificant factor in elk losses.

III. REFUGE DEVELOPMENT & MAINTENANCE

A.        Physical Development

Elk feeding, January 2, 1964 through April 17 (107 days) consumed the constant efforts of six men on a seven days per week basis. Jobs incidental to elk feeding were repairs to hay sleds and wagons, to the passenger sled, to hay conveyors, conveyor motors, cleanup of sheds, hauling of scrap hay wire, snow removal for access and parking areas for visitors at the feed grounds, placing and repair of directional signs, the actual hauling of 6100 passengers and answering the many, many questions consumed numerous hours of labor not directly connected with the actual forking out of hay to the 8,000 head of elk on the place.

With the advent of spring many miscellaneous jobs were attended to before the weather permitted us to start on our general farming program. Some of these chores included: hay sleds painted and stored, culverts cleaned, gravel hauled and spread, roads graded twice, new main entrance cattle-guard installed, fences repaired, and a quantity of canvas irrigation dams constructed.

Our farming program began in May with 210 acres of land disced, planed with the Eversman leveler and 120 acres was leveled with the carryall then disced and planed in obliterating an old homestead site and conversting it into top quality farm land. Other farm work before the irrigation season started: ditch cleanout, penta treatment of lumber, wooden headgates constructed, installation of same and fertilization of hay lands also tallied many man hours in May.

Irrigation of 2100 acres of hay lands consumed the efforts of 13 irrigators starting in late May with part of the crew continuing to irrigate through mid-August for a second cutting.

When the first cutting of hay was ready in early July part of the force was switched to our roll-bale haying operation. When this job was finished they built pole-and-buck fence (near 2 miles of it) along the Weenie Wilson - Elk Refuge new land exchange boundry.

Following was a variety of jobs buttoned up in October and November in an attempt to catch up on all loose ends before fall work was hindered by lowering temperatures and inclement weather. The depositing of 43 loads of clay in Flat Creek below the McBride Place further reduced percolation loss of our valuable irrigation waters in this porous bottomed stream. (Previous channeling and clay deposited has decreased seepage and increased the flow of this stream at the downstream Peterson headgate by 200%), canals were draglined clean, drain ditches constructed, headgates (7) installed, fence gates built and installed, fences repaired, and the swan nesting platforms in the Gros Ventre bottoms were refurbished with willow and hay materials while travel into this area was still feasible.

Prior to the refuge permit-elk-hunt, open area signs were posted. Two men patrolled during the 5 week hunt from daylight to dark. After the hunt, signs were removed.

Minor and routine building maintenance was done in addition to relining living room walls and ceiling, refinishing kitchen cabinets and floor refinishing at Quarter #3; converting a porch to a sleeping room, interior paint job at Quarters #4, built storage cabinets and interior refinishing at Quarters #8. A consolidated purchase of 32 storm windows was made and all were installed on various quarters.

All of our large directional and informational signs were removed and brought into the shop to be reconditioned or reconstructed, as the case maybe, using the latest instructions provided in the Sign Manual.

Spit and polish jobs on the refuge give a lot of pleasure through improved eye appeal and help make the refuge a place we can be proud of. Some of these spruce up jobs here included a number of clean-ups of refuge along our roads, a face-lifting job of refuge road shoulders with the grader and rock picker to facilitate future roadside clean-ups and just plain 'ole landscape

beautification by elimination of unsightly old fences and trash. If you readers have stayed with us and have read this far, this last paragraph wasn't really necessary for most of you have this part of our problem compounded many times over and for that small favor we're - Thankful!

B. Plantings

Cultivated Crops:

Hay harvested at Mormon Row totalled 2075 tons on the first cutting with 137 tons on the second cutting making a total of 2212 tons produced there. In addition 1,177 tons of hay was cut on the refuge and stored in refuge sheds. Total tonnage 3389.

All hay harvested was stored as follows: (Elk Refuge - inside and outside storage.)

To Refuge Storage	Refuge Hay	1,177 Tons
To Refuge Storage	Mormon Row	1,190
Wyoming Game & Fish	Fish Creek	53
Teton Park Headquarters	Teton Park	6
Wyoming Game & Fish	Alkali Creek	300
Teton Park Storage	Moran Wildlife	46
Wyoming Game & Fish	Horse Creek	105
Wyoming Game & Fish	South Park #1	159
Wyoming Game & Fish	South Park #2	216
Wyoming Game & Fish	South Park #3	110
Wyoming Game & Fish	Topping Feed Ground	27
		<hr/>
		3,389

A total of exactly 3000 tons of hay was left in storage after last winters elk feeding program was terminated. A total of 2367 tons of hay was put into storage this summer making a balance of hay on hand at present of 5367 tons. All sheds are full to overflowing with 5152 tons stored in hay sheds and an additional 215 tons stocked outside. This 215 tons will be fed out first to prevent spoilage.

IV. RESOURCE MANAGEMENT

A. Grazing

Nine saddle horses, property of Grand Teton National Park, are wintering on the refuge as covered by previous agreement. The parcel of land west of highway 89 covered by Special Use Permit is still valid, but little used. A total of 83 deer were tallied in December on this steep slope.

## V. PUBLIC RELATIONS

### A. Recreational Use:

Total visits for the year reached a new high of 195,588 and of these 192,688 were for recreational purposes. A year ago total visitations amounted to but 156,000 use days with 149,300 of these for recreational purposes. The main attraction is still viewing the elk herd, either on the winter feed ground or the small representative herd of elk held in the Exhibition Pasture for the summer tourist. Other folks stopped to view the Trumpeter Swan flock on lower Flat Creek. Bird watching, fishing, hunting, riding, added to our visitor load too. Most impressive is the number of people who flock in on winter weekends to get a ride on the hay sleds and view the elk herd at close quarters. One of these weekends tallied 816 visitors and another 996. people who actually rode the hay sleds out into the elk herd.

### B. Refuge Visitors:

(See Visitor List) . . .



<u>NAME</u>	<u>ORGANIZATION</u>	<u>PURPOSE</u>	<u>DATE</u>
Jody Wilson	Secretarial Manager Jackson Chamber of Commerce Jackson, Wyoming	Information	2/10
Kenneth W. Martin	District Supervisor Wyoming Game & Fish Department Jackson, Wyoming	Big Game Hunting	2/12
Tony Bumnetto	Wyoming Travel Commission Cheyenne, Wyoming	Courtesy Call	2/15
Herb Archer	Photographer - Eastman Kodak Rochester, New York	Photo Elk Herd	2/15
Tom Carmichael	Carmichael's Tackle Shop Moose, Wyoming	Photo Elk Herd	2/15
Lewis R. Garlick	Chief, Div. of Sport Fisheries Abq, N. Mex.	Courtesy Call	2/28
Jack E. Hemphill	Regional Supervisor Branch of Fishery Management Abq, N. Mex.	Courtesy Call	2/28
Roland Scharr	Washington, D. C.	Courtesy Call	4/2
Raymond B. St. John	Realty Officer Branch of Realty Abq, N. Mex.	Courtesy Call	4/2
F. V. Olson	Regional Supervisor Branch of Engineering Abq, N. Mex.	Cache Creek - Flat Creek Diversion	4/14
Marcus C. Nelson	Regional Supervisor Branch of Wildlife Refuges Abq, N. Mex.	Cache Creek - Flat Creek Diversion	4/14

<u>NAME</u>	<u>ORGANIZATION</u>	<u>PURPOSE</u>	<u>DATE</u>
David D. Sundstrom	Bear River Migratory Bird Refuge Brigham City, Utah	Cache Creek - Flat Creek Diversion	4/14
Ronald A. Ryder	Assoc., Prof. of Wildlife Management, Colorado State Univ. Fort Collins, Colorado	Elk Studies	5/6
James L. Scheffel	U. S. Public Service Denver, Colorado	Water & Eispasal Check	5/7
Mr. & Mrs. Carl H. Longenecker	Ruby Lake National Wildlife Refuge Ruby Valley, Nevada	Courtesy Call	5/15
Ralph W. Dimmick	Wyoming Game & Fish Department Summer Graduate Work Jackson, Wyoming	Goose Nesting Study	5/15
Darrel F. Shuffler	U. S. Game Management Agent Cambridge, Maryland	Courtesy	6/6
Allan A. Beetle & 50 Students	Head Range Management Section University of Wyoming Laramie, Wyoming	Conservation Studies	6/9
Ross C. Kientz	Hatchery Manager Fish Cultural Station Jackson, Wyoming	Courtesy Call	6/9
Students	University of Idaho	Conservation Studies	6/9
John N. Kundaeli	Moshi, Tanganyika East Africa	Summer Studies	6/24
James N. Kahurananga	Kibondo, Tanganyika East Africa	Summer Studies	6/24

<u>NAME</u>	<u>ORGANIZATION</u>	<u>PURPOSE</u>	<u>DATE</u>
Bill Berry	Secretarial Staff Washington, D. C.	Courtesy Call	6/24
Kenard P. Baer	Ass't Regional Supervisor of Management & Enforcement Abq, N. Mexico	Great Basin Canada Goose Meeting	6/30
Raymond J. Buller	Central Flyway Representative Abq, N. Mexico	Great Basin Canada Goose Meeting	6/30
Jack Welch	G.S.A. Denver, Colorado	Property	7/8
John Cain	U. S. Coast & Geodetic Survey Washington, D. C.	Land Studies	7/10
Laximi B. Rana	Dilli Bazaar, Kalakasthan Kathmandu, Nepal	Operation Observations	7/13
William E. Ackerknecht	Washington, D. C.	Inspection	7/18
Marcus C. Nelson	Regional Supervisor Branch of Refuges Abq, N. Mexico	Inspection	7/18
Robert M. McClung	Photographer & Writer National Geographic	Filming	7/27
Robert W. Scott	Field Supervisor Branch of River Basin Studies Salt Lake City, Utah	Area Studies	7/28
Ethelbert "Bert" MacGregor (Retired)	Conservation Officer Towas, Michigan	Courtesy Call	7/30



<u>NAME</u>	<u>ORGANIZATION</u>	<u>PURPOSE</u>	<u>DATE</u>
Dan M. Sindiyo	Nairobi, Kenya East Africa	Study tour	7/31
B. Serranga	Kampala, Uganda East Africa	Study tour	8/4
Samson Ipoot	Game Warden Uganda, E. Africa	Study tour	8/4
Leo Young	Foreman Bear River Migratory Bird Refuge Brigham City, Utah	Pick up surplus	8/10
Owen Vivian	Midicine Lake Wildlife Refuge Medicine Lake, Montana	Courtesy Call	8/10
Kenneth W. Martin	District Supervisor Wyoming Game & Fish Department Jackson, Wyoming	Haying Operations	8/10
Ernest Waumpler	Deputy Game Warden Wyoming Game & Fish Department Jackson, Wyoming	Haying Operations	8/10
Paul McNeel	Special Deputy Game Warden Wyoming Game & Fish Department Jackson, Wyoming	Haying Operations	8/10
Ken Ryder	Bureau of Land Management Pinedale, Wyoming	Land Problems	8/11
Willis A. Stanton	Procurement Officer Branch of Procurement & Property Mgmt. Abq, N. Mex.	Inspection	8/12

<u>NAME</u>	<u>ORGANIZATION</u>	<u>PURPOSE</u>	<u>DATE</u>
Lynn Greenwalt	Ass't Regional Supervisor Branch of Wildlife Refuges Abq, N. Mex.	Inspection	8/13
Merle O. Bennett	Refuge Manager Kirwin Wildlife Refuge Kirwin, Kansas	Deliver Surplus Grain	8/13
Bill Godby	Engineer Branch of Engineering Abq, N. Mex.	Water Tank Check	8/18
Leon Wive	U. S. Geological Survey Cheyenne, Wyoming	Water Measurement	8/18
John Taggart	State Water Master Cokeville, Utah	Water Management	8/18
Bob Bendt	Washington, D. C.	Courtesy	8/21
F. H. Jacot	Washington, D. C.	Courtesy	8/21
Tom Doughty	Soil Conservation Service Jackson, Wyoming	Cache Creek Diversion	8/21
Harold Burkey	S.C.S., Jackson, Wyoming	Cache Creek Diversion	8/21
Howard Sturges	S.C.S., Casper, Wyo.	Cache Creek Diversion	8/21
Francis V. Olson	Regional Supervisor Branch of Engineering Abq, N. Mex.	Cache Creek Diversion	8/21

<u>NAME</u>	<u>ORGANIZATION</u>	<u>PURPOSE</u>	<u>DATE</u>
Don E. Redfearn	W/L Biologist Branch of Wildlife Refuges Abq, N. Mex.	Master Plan	8/21
C. L. Conaway	Staff Assistant Missouri Basin Field Commission	Review Operations	8/27
Hugh O. Aniakudo	Electrical Engineer Marquette University - Milwaukee (Home) Nigeria	Study tour	8/27
Anthony Antao	Mathematics Marquette University - Milwaukee (Home) Zanzibar	Study tour	8/27
John Nguthu	Physical Science Eartham College (Home) Kenya, E. Africa	Study tour	8/27
Joseph Okpaku	Civil Engineering Northwestern University (Home) Nigeria	Study tour	8/27
Obasi Onuoha	Mechanical Engineer University of Nebraska (Home) Nigeria	Study tour	8/27
L. A. Rillie	U. S. Geological Survey TOPO - Division Denver, Colorado	Flight Path	8/27
Judy Wells	DI - Office of the Secretary Office of Information	Resource Book	9/10

<u>NAME</u>	<u>ORGANIZATION</u>	<u>PURPOSE</u>	<u>DATE</u>
LeMoyne B. Marlott	Hutton Lake Pathfinder Hutton Lake Laramie, Wyoming	Courtesy Call	9/16
Clifford P. Hansen	Governor - State of Wyoming	Diversion & sled rides	9/21
Nels Dahlquist	County Agricultural Agent Jackson, Wyoming	Diversion & sled rides	9/21
Peter Meade	Rancher Jackson, Wyoming	Diversion & sled rides	9/21
Howard Miller	U.S.F.S. Atlanta, Georgia	Courtesy Call	9/22
Mike Gauffin	U.S.F.S. Washington, D. C.	Courtesy Call	9/22
Johh S. McLaughlin	Superintendent Yellowstone National Park Yellowstone, Wyoming	Courtesy Call	10/17
Fred C. Fagergren	Superintendent Grand Teton National Park Moose, Wyoming	Courtesy Call	10/17
Dr. Arne Belsaas	Consultant, Care & Preservation of Game, Norwegian Ministry of Agri. Troncheim, Norway	Observe elk mgmt.	10/19
Dr. Hugh Lamprey	Principal - College of African Wildlife Management Mweka, Tanganyika	Operations Study	11/2

<u>NAME</u>	<u>ORGANIZATION</u>	<u>PURPOSE</u>	<u>DATE</u>
Mr. & Mrs. Robert Yoder	Fish Springs Refuge Dugway, Utah	Courtesy Call	11/4
Harry Clissold	Mayor - Teton County Jackson, Wyoming	Coop. City Park	11/5
Anthony J. Opstedal	General Engineer Branch of Engineering Abq, N. Mex.	Diversion	11/17
William Ryan	Engineer Branch of Engineering Abq, N. Mex.	Diversion	11/17
Roe E. Meyer	Game Agent - Wyoming District Branch of Management & Enforcement Cheyenne, Wyoming	Law Enforcement	12/2
Milosh Marinovich	Editor - "Rad" Belgrade, Yugoslavia	Operation Study	12/11
Earl L. Helfiker	Wildlife Photographer Rochester, N. Y.	Photo elk herd	12/11
John Craighead	Wildlife Research Unit, M.S.U. Missoula, Montana	Y.N.P. elk tags	12/30



C.      Refuge Participation

- Jan. 27-28 Manager Dart and Ass't Blanchard attended meeting of Western States Elk Committee at Wort Hotel. The group rode feed sleds out into the elk herd later on the 27th - to classify elk and a good time was had by all.
- Feb. 27 Refuge Manager Dart and Ass't Blanchard attended a meeting in the State Engineer's Office at Cheyenne on the F.W.S. protest to the Soest's water filing on South Twin Creek.
- April 14 Dart and Blanchard attended Cache Creek Diversion meeting at Court House.
- April 16 Dart and Blanchard attended separate Jackson Hole Cooperative Elk Study, Technical and Advisory Committee Meetings.
- April 16 Blanchard attended Teton County Agricultural Conservation Development Meeting at Court House.
- April 17 Dart and Blanchard attended Wyoming Cooperative Big Game Meeting at Wort Hotel.
- April 27 Dart W/City officials re: plans covering City's new series of water wells on Elk Refuge.
- May 7 Manager Dart, Ass't Blanchard, and Foremen Sperl and Winters attended meeting at Teton Park covering mutual problems.
- May 11 Manager Dart and Ass't Blanchard met on refuge with South Park Water User's concerning construction bid on the Gros Ventre - Flat Creek Diversion ditch.
- May 13 Manager Dart met with South Park Water Users. Final acceptance of proposed corrective measures to Gros Ventre - Flat Creek ditch.
- May 14 Dart and Blanchard met W/S.C.S. on Cache Creek Diversion by-pass into refuge.
- May 18 Manager Dart attended Rotary Club as guest of Jackson's Mayor Harry Clissold, tour and talk on elk management.
- May 26 W/directors of South Park Water User's on Gros Ventre - Flat Creek Diversion ditch repair.

- June 3 Refuge Manager attended half day session on Wildlife Range Management Cooperative meeting on Management of Northern Yellowstone Elk.
- June 4 Manager Dart met with City and County Representatives re: prevention of unauthorized use of cooperative park on refuge land, north end of town!
- June 9 Manager Dart gave a talk to group of 50 Wyoming 4-H boys and girls and 10 adults who visited the refuge.
- June 16 Manager Dart met with Mayor Harry Clissold and County Commissioner Robert Heckt on Airstream rally site.
- June 30 Great Basin Canada Goose meeting held at refuge - headquarters and attended by Manager Dart and Ass't Blanchard.
- Sept. 21 Manager Dart met with Governor Clifford P. Hansen (Wyo.), Nels Dalquist (County Agricultural Agent), Peter Meade, Rancher re: Snake River - Gros Ventre water distribution system.
- Sept. 25 Mechanic James Flower attended State Fire School at Casper, Wyoming.
- Nov. 5 Manager Dart met with Mayor Harry Clissold re: diverting Cache Creek through refuge.
- Dec. 3 Manager Dart and Ass't Blanchard attended Cooperative Elk Study Meeting. The Technical Committee (Chairmaned by Blanchard) met in the morning and the Advisory Committee (Chairmaned by Manager Dart) met in the afternoon.
- Dec. 9 Manager Dart and Ass't Blanchard met with Bill Jensen, Harry Brown, Dr. MacLeod - Rotary Representatives requesting elk feeding information and strongly advocated the use of horse-drawn sleds for elk feeding.
- Dec. 10 Manager Dart and Ass't Blanchard met with the Advisory Board of the Cooperative Elk Park (located on refuge ground on the north end of Jackson). The meeting was held to determine the course of action necessary to hold to provisions as outlined in the original memorandum of agreement in setting up the area.

D. Hunting

A five week special permit hunt was conducted on the refuge starting September 10 and running through October 15. The purpose of the hunt was to reduce or eliminate our summer resident elk herd constantly raiding hay fields. (See section on Elk of this report).

A total of 100 - Elk Refuge permits were issued. There was a total of 585 prospective hunters at the five drawings. Most of the successful permit holders hunted but after the first flurry of shots on the first two weeks of hunting the hunting success plummeted. When the hunting season opened in Teton Park across the river, refuge kill success picked up again. This was only during the last two weeks of the season. A total of 43 kills (plus 7 wound losses) resulted from the hunt. This was good but we had hoped for better success. Actually, it was but half as well as last years hunt when 85 kills (and 10 losses) resulted. The following data was collected from the hunt:

<u>Drawing No.</u>	<u>Bull</u>	<u>Spike</u>	<u>Cow</u>	<u>F.Calf</u>	<u>M.Calf</u>	<u>Total</u>	<u>Applicants</u>
1	2	5	2			9	82
2	3	-	7	1	1	12	211
3	-	1	-	-	-	1	62
4	2	3	3	-	-	8	107
5	2	-	8	1	2	13	123
Wound Losses	2	1	4			7	
<hr/>							
Total Reduction	11	10	26	2	3	50	585

VI. OTHER ITEMS

A. Items of Interest

F. Sheldon Dart, reported for duty as Refuge Manager of the Elk Refuge on January 27.

From the balmy New Mexico climate (Bosque del Apache) to blizzardy Wyoming in January, a very in-opportune time to make such a climatic change, but "Skeet" took it in stride and loved it. Skeet started his government career just a few miles north of here as a ranger in Yellowstone Park.



The GS-3 Refuge Receptionist position was filled from the Civil Service register by Carol S. Hinchman on January 30. The position had been open since December 16, 1963. Miss Hinchman had previously worked at adjacent Teton Park as a summer employee.

The Jackson Boy Scout Troop held their annual antler pickup rally on Saturday May 6. This endeavor was only moderately successful for the refuge continued to be plagued by unauthorized pilferers of antlers. The Scouts who are able to collect \$5.00 to \$10.00 for full sets of antlers attached to skulls were much chagrined at finding several full sets with just the last 6 or 8 inches of each point hack-sawed off. Single dropped antlers were also found like this. It seems, some gluttonous individuals persists in destroying entire full-sets and many single antlers belonging to the Boy Scouts. Thieving a few bobbles for himself alone by converting the sawed off tips into beer can openers and ice pick handles and items to be peddled to the eager summer tourist. This condition exists despite articles published in the local paper each spring requesting support in saving the antlers for the Scout organization.

All single antlers picked up on the feed grounds by the refuge personnel and those collected by Scouts on their antler pickup days have been contracted for by the local Rotary Club at 50¢ each. The photo section of this report shows one of three truck loads being stored by the Rotary Club for an elk horn arch in the town square. The picture shows just part of the 1068 antlers collected for this purpose. Once the demand for antlers for the arch is satisfied the Scouts are planning to auction off the annual collections of single beams. They will make several lots out of the antlers hoping to keep any one individual from getting a corner on the "horn" market as could happen if they were all sold in one lot. There is much demand for antlers with single beams selling from \$2.00 to \$7.00 each locally and first class full-sets going as high as a record \$35.00.

The job of eliminating the erosion problem on the Gros Ventre - Flat Creek, 'little Grand Canyon', irrigation ditch was finally gotten underway. This gorge, some three-fourths of a mile long and up to 70 feet deep has been caused by the South Park Water User's efforts to shunt more and more irrigation waters from the Gros Ventre drainage into the Flat Creek drainage. This effort has caused a classic example of mans mismanagement of land and water. We are happy to report that \$118,000.00 has been appropriated for issuance of a bid to install a covered pipeline to carry the water down the 86 foot drop. The bid calls for 4,400 feet of 48" steel or concrete pipe designed for 148 second feet of flow.

A dirt plug or dike has already been installed at a point where the 48" pipeline will across the gorge. This work, done under bid by Skyline Construction of Big Piney, Wyoming. The \$10,518.00 job calling for installing 158 feet of 48 inch C.M.P. pipe, 2 corrugated anti-seep collars and 8200 cu. yards of class B fill materials was started on November 17 and completed on December 17. The 158' of 48" C.M.P. was required in the fill to permit water through the gorge until the covered by-pass is completed. Baring unforeseen difficulties, this gorge, a cutthroat trout spawning bed and marsh land destroyer and supplier of silt should be eliminated by next year at this time.

Teton County has eliminated its snow and road maintenance Shop, equipment and crews have gone entirely out of the business. All work is handled by road contract. As refuge roads were previously plowed by the County equipment, in order that refuge and other children could get to the schools, new arrangements had to be made. As no suitable snow removal equipment was available to us a contract was entered in for snow removal. This contract for 5.15 miles of road was secured for \$2497.45.

The City of Jackson finally got their two wells, drilled on the refuge, into operation on November 3. The 800,000 gallon storage tank plus two wells, plus their chloronating plant and control panel building are all located on refuge property. Foot-hold for acquiring this privilege was their water filing on Miller Spring and declaration that they planned to develope this spring for City purposes. This action would have eliminated the best half of our Trumpeter Swan wintering area.

Water from the wells is of warmer temperature than that previously used from Cache Creek and should reduce considerable the previous problem they have had with freezing of waterlines in winter.

We are proud to report that Mechanic Jim Flower hit the jack-pot on employee suggestions this year. (See photo section). He copped four of the coveted awards. One each for his electric hip boot dryer, adjustable farm gate hinge, lockable Handyman jack carrier and one for his pickups truck spare tire carrier that has provisions for holding a broom, shovel and water bag.


On July 4, a refuge picnic (the fourth consecutive one) was held at Jackson Lake again this year. It does much to generate a "refuge family" spirit among the employees — both temporaries and regulars. The pot-luck feast featured pounds of fried chicken, delicious salads and many other goodies, followed by refreshments, watermellon, boat riding, water skiing and a good time was enjoyed by all.

Herb Archer, photographer from Eastman Kodak spent several days on the refuge last February. His prime target was several choice shots of the elk herd on the feed ground with the snow covered peaks of the Tetons in the background and a local photogenic lady riding on a elk feed sleigh in the foreground. (We are pleased to report that after much checking on the local beauties he finally chose our own attractive refuge clerk, Carol Hinchman).

If you should be in New York's Grand Central Station this winter you should see a mural some 10' X 50' featuring the Fish and Wildlife Service's, National Elk Refuge in the Jackson Hole country.

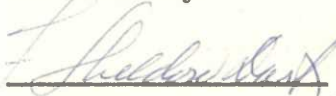
- B. NR Reports
- C. Photographs
- D. Signature

Compiled by:



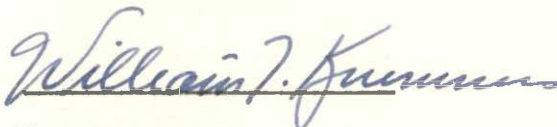
Willard E. Blanchard  
Ass't Refuge Manager

Submitted by:



F. Sheldon Dart  
Refuge Manager

Reviewed by:



274

2/9/65



3-1750  
Form NR-1  
(Rev. March 1953)

W A T E R F O W L

REFUGE NATIONAL ELK REFUGE  
JACKSON, WYOMING

MONTHS OF JANUARY TO APRIL, 19 64

[illegible]



3 -1750a  
 Cont. NR-1  
 (Rev. March 1953)

WATERFOWL  
 (Continuation Sheet)

REFUGE NATIONAL ELK REFUGE, JACKSON, WYOMING

MONTHS OF JANUARY TO APRIL, 1964

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen: total	
	11	12	13	14	15	16	17	18			
Swans:											
Whistling							3	3	42		
Trumpeter	20	20	24	24	24	20	14	14	2716		
Geese:											
Canada	1	12	8	46	50	50	60	60	2219		
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	700	780	750	750	800	700	450	450	75,705		
Black											
Gadwall	35	40	50	50	50	65	60	50	2,940		
Baldpate											
Pintail	150	150	150	150	175	140	75	15	14,595		
Green-winged teal	25	25	25	25	25	40	50	60	2,380		
Blue-winged teal											
Cinnamon teal											
Shoveler											
Wood											
Redhead											
Ring-necked	25	25	25	25	35	35	10	10	2,681		
Canvasback											
Scaup											
Goldeneye	25	25	25	25	20	20	20	20	2,730		
Bufflehead									420		
Ruddy											
Other											
C. Mergansers									21		
Coot:						12	35	60	749		

(over)

	(5)	(6)	(7)
	Total Days Use	Peak Number	Total Production
Swans	2758	29	None
Geese	2219	60	None
Ducks	101,472	750	None
Coots	749	60	None

# SUMMARY

Principal feeding areas Flat Creek

Principal nesting areas \_\_\_\_\_

Reported by F. Sheldon Dart, Refuge Manager

## INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

Interior Duplicating Section, Washington, D. C.  
1953

3-1751  
Form NR-1A  
(Aug. 1952)

MIGRATORY BIRDS  
(Other than Waterfowl)

Refuge NATIONAL ELK REFUGE  
JACKSON, WYOMING

Months of JANUARY to APRIL 1964

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
I. <u>Water and Marsh Birds:</u>										
Sandhill Cranes	12	4/2	12/	4/2	2	4/23	-	-	-	
Great Blue Heron	2	3/9	2	3/9	1	4/30	-	-	-	
Wilson Snipe	Heard	4/14	-	-	-	-	-	-	-	
II. <u>Shorebirds, Gulls and Terns:</u>										

(over)



(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>					
Mourning dove					
White-winged dove					
IV. <u>Predaceous Birds:</u>					
Golden eagle	2	1/28	2	1/28	1 4/15
Duck hawk					
Horned owl	1	2/12	1	2/12	1 1/17
Magpie	25	1/1	25	3/15	25 4/30
Raven	50	1/1	50	3/1	10 4/30
Crow	25	3/4	30	4/5	7 4/15
Bald Eagle	2	1/6	2	3/12	1 2/4

Reported by F. Sheldon Dart, Refuge Manager

## INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)  
II. Shorebirds, Gulls and Terns (Charadriiformes)  
III. Doves and Pigeons (Columbiformes)  
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first migration record for the species for the reporting period.
- (3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.



3-1752  
Form NR-2  
(April 1946)

UPLAND GAME BIRDS

Refuge NATIONAL ELK REFUGE Months of JANUARY to APRIL, 19 64

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Sage grouse	Sage flats, hills and hay meadow lands 22,500	1500			50-50				15-	
Ruffed grouse	Aspen & creek bottoms along Gros Ventre and Flat Creek - 2,000 acres	135			50-50				10-	
Dusky grouse	Timbered areas along east boundry	100			50-50				5-	

## INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.\*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

\* Only columns applicable to the period covered should be used.

3-1754  
Form NR-4  
(June 1945)

SMALL MAMMALS

Refuge NATIONAL ELK REFUGE  
JACKSON, WYOMING

Year ending April 30, 1964

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs					(5) Total	
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re- stocking	For Re- search	Share Trapping			Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	Popula- tion
								Permit Number	Trappers Share	Refuge share				
Coyote	Entire land & marsh area 23,791	158	no removals of any type-											150
Bobcat	23,791	11,821	"	"	"	"	"							2
Striped Skunk	20,000	10,000	"	"	"	"	"							2
Badger	20,000	2,000	"	"	"	"	"							10
Mink	3,500	350	"	"	"	"	"							10
Muskrat	3,500	15	"	"	"	"	"							350
Beaver	1,500	50	"	"	"	"	"							30
* List removals by Predator Animal Hunter														

REMARKS:

Reported by F. Sheldon Dart, Refuge Manager



## INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

- (1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)
- (2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headings listed.
- (4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.
- (5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.
- REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.





## REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

**Report all grain in bushels.** For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.
- (4) A total of columns 2 and 3.
- (6) Column 4 less column 5.
- (7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters granary," etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

This is  
Alma  
Velsart  
H



Elk feeding --- some 36 years ago. Wapiti think cottonseed cake is good 'elk groceries'.



Despite fears of many skeptics, there are still many - many elk in the Jackson Hole country as depicted on just one of the refuge feed grounds.



A snowball pause-that-refreshes on the Boy Scout 'Antler Pick-Up Day' on May 16th. The Scouts are the lucky recipients of all refuge elk antlers.



Rotary Club members with one of three loads of elk antlers purchased from the Scouts at .50¢ each. Antlers are for an elk horn arch in the town square. (See items of Interest Section).





Part of the "Elk Possee" of 38 riders who hazed 550 summering "Freddie-the-FreeLoader" elk northward off the refuge on May 24.



Several heavy antlered bulls of the elk herd in the Exhibition Pasture were real traffic stoppers. Many vacationers pulling out on to the convenient parking areas to view the herd.



*note mis-  
spelled word  
cost*

One of many safety signs posted to assist in "care" of winter visitors viewing the elk herd.



A "Safety Pays" sign posted in the Refuge Shop.



Student Trainee Jerry Grau with Sagehen chicks.  
These would make easy pickings for a predator.



Canada geese hand-reared in a study program and released on the refuge over a year ago are still with us - - - - unclipped. (One has since been lost).



The 6 X 6 Fire truck received from Air Force does a grand job. The two smaller hoses can be used while under way. They received a good try out on range fires this summer.



Lotsa' force -- if needed. Were proud of the unit. It's terrific!





Blackened area caused when trash barrel incinerator fire got away in town of Jackson, burned across vacant lot and into the refuge. Elk groceries destroyed - - - 30 acres.



Shades of a fire bug!! Increased blackened area. Cause: City Fire Department burning vegetation on vacant lots to remove fire danger. Reason: did not alert refuge crew to stand by as added protection. Embarrassing? Yes, to all! Elk groceries destroyed 30 more acres.



Recreation on The Elk Refuge - Winter camp out! 2/64.



Refuge Manager Skeet Dart, congratulates Auto Mechanic Jim Flower, as he presents him with two of four coveted Incentive Awards Jim won this year.



Fire truck, 6 X 6, obtained from surplus after painting and outfitting.



Don Taylor with four-in-hand on elk feed sled 2/64.



3-1750  
Form NR-1  
(Rev. March 1953)

## WATERFOWL

REFUGEE NATIONAL ELK REFUGEE

MONTHS OF SEPTEMBER TO DECEMBER, 1944

(1) Species	(2) Weeks of reporting period									
	: sept. : oct. : nov. :									
	1 - 5 : 1 1 5	6 - 12 : 2 2 12	13 - 19 : 3 3 19	20 - 26 : 4 4 26	27 - 3 : 5 5 3	4 - 10 : 6 6 10	11 - 17 : 7 7 17	18 - 24 : 8 8 24	25 - 31 : 9 9 31	1 - 7 : 10 10 7
<b>Swans:</b>										
Whistling										
Trumpeter	7	8	9	13	15	24	31	34	44	46
<b>Geese:</b>										
Canada	68	53	47	57	60	81	110	110	127	140
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
<b>Ducks:</b>										
Mallard	175	500	560	760	820	1100	380	430	460	400
Black										
Gadwall	23	30	30	60	43	41	10	38	32	50
Baldpate										
Pintail								42	50	58
Green-winged teal	25	60	75	81	43	41	50	68	37	38
Blue-winged teal	19	48	80	69	62	30	35	-	-	-
Cinnamon teal										
Shoveler										
Wood										
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye	38	42	55	51	41	38	50	59	45	40
Bufflehead										
Ruddy										
Other										
<b>Coots</b>	112	175	200	150	146	35	4			



3-1750a  
 Cont. NR-1  
 (Rev. March 1953)

WATERFOWL  
 (Continuation Sheet)

REFUGE NATIONAL Elk Refuge

MONTHS OF August-September TO October, 1944

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods seen Estimated total	
	8-14 11	15-21 12	22-28 13	29-5 14	6-12 15	13-19 16	20-26 17	27-31 18			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	57	44	31	29	19	20	22	29	3374		
Cackling	99	78	62	54	38	18	23	4	8743		
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	480	448	510	471	523	537	504	585	69601		
Black											
Gadwall	60	62	60	75	13	-	-	-	4389		
Baldpate	20	20	13	25	12	3	6	8	749		
Pintail	55	43	18	40	15	15	8	8	2464		
Green-winged teal	25	69	82	93	40	47	7	15	6251		
Blue-winged teal											
Cinnamon teal											
Shoveler											
Wood											
Redhead											
Ring-necked											
Canvasback						3	3	3	63		
Scaup											
Goldeneye											
Bufflehead	39	42	40	47	48	47	30	24	2432		
Ruddy	11	12	6	7	8	11	6	8	483		
Other											
Coot:									822		
					(over)						

	Total Days Use	Peak Number	Total Production	SUMMARY
Swans	3374	57		Principal feeding areas <u>Flat Creek in refuge marsh -</u>
Geese	8743	140		
Ducks	91833	1250		Principal nesting areas <u>does not apply for period</u>
Coots	822	200		
				Reported by <u>F. Sheldon Dart</u>

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

W A T E R F O W L

REFUGE National Elk Refuge

MONTHS OF May TO August 31, 1964

(1) Species	(2) Weeks of reporting period									
	1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter	30	21	18	6	2	4	4	4	8	8
Geese:										
Canada	60	20	7	3	3	2	22	23	22	22
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	400	360	300	300	220	150	124	92	80	120
Black										
Gadwall	50	40	23	25	25	18	15	13	39	36
Baldpate										
Pintail	15	7								
Green-winged teal	60	30	47	12	14	6	3	3	1	
Blue-winged teal	2	6	3	3						
Cinnamon teal				6	15	4	4	7	4	
Shoveler										
Wood										
Redhead		5								
Ring-necked	21	10								
Canvasback										
Scaup										
Goldeneye	45	40	36	23	27	24	23	31	38	
Bufflehead										
Ruddy										
Other										
Coots	60	60	58	42	26	39	47	48	47	



3-1750a  
 Cont. NR-1  
 (Rev. March 1953)

WATERFOWL  
 (Continuation Sheet)

REFUGE National Elk Refuge

MONTHS OF May

TO August 31, 1964

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods seen Estimated total	
	11	12	13	14	15	16	17	18			
Swans:											
Whistling											
Trumpeter	8	8	8	8	8	8	7	7	1,379	1	3
Geese:											
Canada	25	25	28	28	28	24	75	68	3,395	4	12
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	100	150	238	360	376	400	450	450	32,690	-	350
Black											
Gadwall	52	36	32	35	35	-	-	-	3,318	-	90
Baldpate											
Pintail									154		
Green-winged teal		5	11	9	6	28	7	7	1,743	2	7
Blue-winged teal	1						10	12	350		
Cinnamon teal	11	10	14	10	3				616		
Shoveler											
Wood											
Redhead									35		
Ring-necked											
Canvasback											
Scaup											
Goldeneye	33	14	41	37	35	48	42	44	4,102	5	23
Bufflehead											
Ruddy											
Other											
Coot:	41	43	40	45	64	70	85	112	6,489	5	19
reverse					(over)						



	Total Days Use	Peak Number	Total Production	SUMMARY
Swans	<u>1,379</u>	<u>30</u>	<u>3</u>	Principal feeding areas <u>Flat Creek, Pierre Pond, Nowlin Creek</u>
Geese	<u>3,395</u>	<u>60</u>	<u>12</u>	
Ducks	<u>43,008</u>	<u>599</u>	<u>449</u>	Principal nesting areas <u>Same</u>
Coots	<u>6,489</u>	<u>112</u>	<u>19</u>	
				Reported by <u>P. Sheldon Dart, Refuge Manager</u>

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

3-1750  
Form NR-1  
(Rev. March 1953)

# WATERFOWL

REFUGE National Elk Refuge

MONTHS OF January TO April, 1961

[illegible]

3 -1750a  
 Cont. NR-1  
 (Rev. March 1953)

WATERFOWL  
 (Continuation Sheet)

REFUGE National Elk Refuge, Jackson, Wyoming

MONTHS OF January TO April, 19 64

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen: total
	11	12	13	14	15	16	17	18		
Swans:										
Whistling										
Trumpeter	20	20	24	24	24	20	14 <sup>3</sup>	3	42	
Geese:									2716	
Canada	1	12	8	46	90	90	60	60	2219	
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	700	780	750	750	800	700	450	450	75,705	
Black										
Gadwall	35	40	90	90	90	65	60	90	2,940	
Baldpate										
Pintail	190	190	190	190	175	140	75	15	14,995	
Green-winged teal	25	25	25	25	25	40	90	60	2,360	
Blue-winged teal										
Cinnamon teal										
Shoveler										
Wood										
Redhead										
Ring-necked	25	25	25	25	35	35	10	10	2,681	
Canvasback										
Scaup										
Goldeneye	25	25	25	25	20	20	20	20	2,730	
Bufflehead									420	
Ruddy										
Other										
C. Mergansers									21	
Coot:						12	35	60	749	

(over)

	(5)	(6)	(7)
	Total Days Use	Peak Number	Total Production
Swans	2758	29	None
Geese	2219	60	None
Ducks	101,472	750	None
Coots	749	60	None

# SUMMARY

Principal feeding areas Flat Creek

Principal nesting areas

Reported by

F. Sheldon Dart, Refuge Manager

## INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

Interior Duplicating Section, Washington, D. C.  
1953



3-1751  
Form NR-1A  
(Aug. 1952)

MIGRATORY BIRDS  
(Other than Waterfowl)

Refuge NATIONAL WILDLIFE REFUGE  
JACKSON, WYOMING

Months of \_\_\_\_\_ to \_\_\_\_\_ 195\_\_\_\_\_

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
I. <u>Water and Marsh Birds:</u>										
Sandhill Crane	2	9/3	2	9/3	2	9/3	-	-	-	30
Great Blue Heron	1	9/30	2	9/30	1	11/3	-	-	-	200

(over)

(1)	(2)		(3)		(4)		(5)		(6)
III. <u>Doves and Pigeons</u> :									
Mourning dove	1	10/5	1	10/5	1	10/5	1	10/19	45
White-winged dove									
IV. <u>Predaceous Birds</u> :									
Golden eagle	2	12/14	2	12/14	2	12/14	2	12/28	60
Duck hawk									
Horned owl									
Magpie									
Raven									
Crow									
Bald Eagle	-	-	-	-	-	-	-	-	-
Reported by <u>P. G. Smith</u>									

# INSTRUCTIONS

(See Sec. 7532, Wildlife Refuges Field Manual)

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)  
II. Shorebirds, Gulls and Terns (Charadriiformes)  
III. Doves and Pigeons (Columbiformes)  
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first migration record for the species for the reporting period.
- (3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

(Aug. 1952)

Refuge ~~National Elk Refuge~~

Months of **May** to **August**, 1964

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
I. <u>Water and Marsh Birds:</u>										
Sandhill Cranes	2	5/3	6	6/29	4	8/25	-	one	2	600
Blue Heron	1	5/6	2	6/15	1	8/27	-	-	-	200
Wilson Snipe	2	5/8	15	6/28	1	8/24	-	one	4	1410
Curlew	1	7/8	15	7/8	1	7/8	-	-	-	<del>150</del> 30
Wilson Phalarope	15	5/5	15	5/5	3	5/20	-	-	-	150
Mountain Plover	1	6/18	1	6/18	1	6/18	( NEW BIRD )			1
II. <u>Shorebirds,</u> <u>Gulls and</u> <u>Terns:</u>										

(over)





3-1751  
Form NR-1A  
(Aug. 1952)

MIGRATORY BIRDS  
(Other than Waterfowl)

Refuge National Elk Refuge Months of January to April 1954

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
I. <u>Water and Marsh Birds:</u>										
Sandhill Cranes	12	4/2	12	4/2	2	4/23	-	-	-	
Great Blue Heron	2	3/9	2	3/9	1	4/30	-	-	-	
Wilson Snipe	Heard	4/14	-	-	-	-	-	-	-	
II. <u>Shorebirds, Gulls and Terns:</u>										

(over)

(1)	(2)		(3)		(4)		(5)		(6)
III. <u>Doves and Pigeons</u> :									
Mourning dove									
White-winged dove									
IV. <u>Predaceous Birds</u> :									
Golden eagle	2	1/28	2	1/28	1	4/15			
Duck hawk									
Horned owl	1	2/12	1	2/12	1	1/17			
Magpie	25	1/1	25	3/15	25	4/30			
Raven	50	1/1	50	3/1	10	4/30			
Crow	25	3/4	30	4/5	7	4/15			
Bald Eagle	2	1/6	2	3/12	1	2/4			
Reported by <u>F. Sheldon Dart, Refuge Manager</u>									

#### INSTRUCTIONS

(See Sec. 7532, Wildlife Refuges Field Manual)

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)  
 II. Shorebirds, Gulls and Terns (Charadriiformes)  
 III. Doves and Pigeons (Columbiformes)  
 IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first migration record for the species for the reporting period.
- (3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

3-1750b  
Form NR-1B  
(Rev. Nov. 1957)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE  
BUREAU OF SPORT FISHERIES AND WILDLIFE

WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge National Elk Refuge For 12-month period ending August 31, 1964

Reported by F. Sheld<sup>on</sup> Dart, Title Refuge Manager

(1)	(2)	(3)	(4)	(5)
Area or Unit	Habitat		Breeding	
Designation	Type Acreage	Use-days	Population	Production
	Crops <u>7,000</u>	Ducks <u>43,008</u>	<u>100</u>	<u>449</u>
	Upland <u>15,606</u>	Geese <u>3,375</u>	<u>10</u>	<u>16</u>
	Marsh <u>1,000</u>	Swans <u>1,379</u>	<u>2</u>	<u>3</u>
	Water <u>40</u>	Coots <u>6,489</u>	<u>40</u>	<u>19</u>
	Total <u>23,648</u>	Total <u>54,271</u>	<u>152</u>	<u>487</u>
	Crops _____	Ducks _____	_____	_____
	Upland _____	Geese _____	_____	_____
	Marsh _____	Swans _____	_____	_____
	Water _____	Coots _____	_____	_____
	Total _____	Total _____	_____	_____
	Crops _____	Ducks _____	_____	_____
	Upland _____	Geese _____	_____	_____
	Marsh _____	Swans _____	_____	_____
	Water _____	Coots _____	_____	_____
	Total _____	Total _____	_____	_____
	Crops _____	Ducks _____	_____	_____
	Upland _____	Geese _____	_____	_____
	Marsh _____	Swans _____	_____	_____
	Water _____	Coots _____	_____	_____
	Total _____	Total _____	_____	_____
	Crops _____	Ducks _____	_____	_____
	Upland _____	Geese _____	_____	_____
	Marsh _____	Swans _____	_____	_____
	Water _____	Coots _____	_____	_____
	Total _____	Total _____	_____	_____

(over)

## INSTRUCTIONS

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

- (1) Area or Unit: A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions.
- (2) Habitat: Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.
- (3) Use-days: Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form NR-1.
- (4) Breeding  
Population: An estimate of the total breeding population of each category of birds for each area or unit.
- (5) Production: Estimated total number of young raised to flight age.



3-1752  
Form NR-2  
(April 1946)

UPLAND GAME BIRDS

Refuge NATIONAL WILDLIFE REFUGE  
JACKSON, WYOMING Months of SEPTEMBER to NOVEMBER, 19 44

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs 'v' d.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Sage Grouse	Sage brush flats, hills & meadows	1500	-	-	50-50	-	-	-	100	
Ruffed Grouse	Spring creeks & River bottoms	135	one	3	50-50	-	-	-	10	
Dusky Grouse	Timbered areas	100	-	-	50-50	-	-	-	5	

## INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.\*

- |                     |  |
|---------------------|--|
| (1) SPECIES:        | Use correct common name.   |
| (2) DENSITY:        | Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks. |
| (3) YOUNG PRODUCED: | Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.  |
| (4) SEX RATIO:      | This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.  |
| (5) REMOVALS:       | Indicate total number in each category removed during the report period.   |
| (6) TOTAL:          | Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.   |
| (7) REMARKS:        | Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.  |

\* Only columns applicable to the period covered should be used.

3-1752  
Form NR-2  
(April 1946)

UPLAND GAME BIRDS

Refuge National Elk Refuge Months of May to August, 1964

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd.	Estimated Total		Hunting	For Re- stocking	For Research		
Common Name					Percentage				Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Sage Grouse	Sagebrush flats, meadowlands	1500	2		50-50	NONE			15	
Ruffed Grouse	Spring creeks and river bottoms	135	NONE		50-50	NONE			10	Drumming heard in Gros Ventre bottoms once.
Dusky Grouse	Timbered areas	100	NONE		50-50	NONE			5	

## INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.\*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

\* Only columns applicable to the period covered should be used.



3-1752  
Form NR-2  
(April 1946)

UPLAND GAME BIRDS

Refuge National Elk Refuge Months of January to April, 1964

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Sage grouse	Sage flats, hills and hay meadow lands 22,500	1500			50-50				15 -	
Ruffed grouse	Aspen & creek bottoms along Gros Ventre and Flat Creek - 2,000 acres	135			50-50				10 -	
Dusky grouse	Timbered areas along east boundary	100			50-50				5 -	

## INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.\*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

\* Only columns applicable to the period covered should be used.

3-1753  
Form NR-3  
(June 1945)

# BIG GAME

Refuge NATIONAL ELK REFUGE Calendar Year 1964

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
			Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
Common Name	Cover types, total Acreage of Habitat	Number												
ELK	23,791  Refuge feed ground census February 26, 1964 Cows 4867 Calves 1775 Spikes 307 Large Bulls 967  7916	50*	50	-	-	-	2	-	79	-	-	8,000	4500	26 bulls per 100 cows
											Losses ———  Bulls Cows Calves 40 20 19			
Moose -	3,000	3	-	-	-	-	-	-	-	-	-	30	20	50/50
Mule Deer	2,000	2	-	-	-	-	-	-	-	-	-	100	100	50/50

Remarks: Of the hunting removals 43 were kills and 7 were wound losses. \*The figure of 40 calves produced was from the sedentary herd ranging in the Gros Ventre bottoms. See figures above for calf crop of the migratory herd.

Reported by F. Sheldon Dart



## INSTRUCTIONS

### Form NR-3 - BIG GAME

- (1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.
- (2) DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated total number of young produced on refuge.
- (4) REMOVALS: Indicate total number in each category removed during the year.
- (5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.
- (6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.
- (7) TOTAL REFUGE POPULATION: Give the estimated population of each species on the refuge at period of its greatest abundance and also as of Dec. 31.
- (8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

116008



3-1754  
Form NR-4  
(June 1945)

SMALL MAMMALS

Refuge NATIONAL ELK REFUGE Year ending April 30, 1964

JACKSON, WYOMING

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs					(5) Total Popula- tion	
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re- stocking	For Re- search	Share Trapping			Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	
								Permit Number	Trappers Share	Refuge share				
Coyote	Entire land & marsh area 23,791	158	no removals of any type --											150
Bobcat	23,791	11,821	"	"	"	"	"							2
Striped Skunk	20,000	10,000	"	"	"	"	"							2
Badger	20,000	2,000	"	"	"	"	"							10
Mink	<del>21,000</del> 3,500	350	"	"	"	"	"							10
Muskrat	3,500	15	"	"	"	"	"							350
Beaver	1,500	50	"	"	"	"	"							30

\* List removals by Predator Animal Hunter

\* List removals by Predator Animal Hunter

REMARKS:

Reported by F. Sheldon Dart, Refuge Manager

## INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

- (1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)
- (2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headings listed.
- (4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.
- (5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.
- REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

DISEASE

Refuge NATIONAL WILDLIFE REFUGE Year 1964

Botulism

Lead Poisoning or other Disease

Period of outbreak \_\_\_\_\_

Period of heaviest losses \_\_\_\_\_

Losses:

	Actual Count	Estimated
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Areas affected (location and approximate acreage) \_\_\_\_\_

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.) \_\_\_\_\_

Condition of vegetation and invertebrate life \_\_\_\_\_

Remarks No indications of botulism.

Kind of disease \_\_\_\_\_

Species affected \_\_\_\_\_

Number Affected Species	Actual Count	Estimated
_____	_____	_____
_____	_____	_____
_____	_____	_____

Number Recovered \_\_\_\_\_

Number lost \_\_\_\_\_

Source of infection \_\_\_\_\_

Water conditions \_\_\_\_\_

Food conditions \_\_\_\_\_

Remarks No dead or sick ducks noted.



PUBLIC RELATIONS  
(See Instructions on Reverse Side)

Refuge NATIONAL ELK REFUGECalendar Year 1964

## 1. Visits

a. Hunting 300      b. Fishing 1600      c. Miscellaneous 193,188      d. TOTAL VISITS 195,588

## 1a. Hunting (on refuge lands)

TYPE	HUNTERS	ACRES	MANAGED BY
Waterfowl			
Upland Game			
Big Game	<u>300</u>	<u>5000</u>	<u>Refuge</u>
Other			

Number of permanent blinds -Man-days of bow hunting included above -

Estimated man-days of hunting on lands adjacent to  
refuge. 2500

## 1b. Fishing (area open to fishing on refuge lands)

TYPE OF AREA	ACRES	MILES
Ponds or Lakes	<u>4</u>	
Streams and Shores		<u>9</u>

## 1c. Miscellaneous Visits

Recreation 192,688      Official 500  
Economic Use 500      Industrial

## 2. Refuge Participation (groups)

TYPE OF ORGANIZATION	on Refuge		Off Refuge	
	NO. OF GROUPS	NUMBER IN GROUPS	NO. OF GROUPS	NUMBER IN GROUPS
Sportsmen Clubs			<u>2</u>	<u>100</u>
Bird and Garden Clubs	<u>1</u>	<u>4</u>		
Schools	<u>3</u>	<u>36</u>		
Service Clubs	<u>1</u>	<u>9</u>	<u>1</u>	<u>35</u>
Youth Groups	<u>1</u>	<u>20</u>		
Professional-Scientific			<u>2</u>	<u>60</u>
Religious Groups				
State or Federal Govt.	<u>4</u>	<u>25</u>	<u>3</u>	<u>80</u>
Other				

## 3. Other Activities

TYPE	NUMBER	TYPE	NUMBER
Press Releases	<u>5</u>	Radio Presentations	
Newspapers (P.R.'s sent to)	<u>1</u>	Exhibits	
TV Presentations		Est. Exhibit Viewers	



INSTRUCTIONS

Item 1: Total of a, b, and c, equal d.

"Visit" - definition. Any person who is on refuge lands or waters during a day or part thereof for the purpose of: hunting, fishing, bird-watching, recreation, business or economic use, official visit, or similar interest. INCLUDE - those who stop within the refuge while traveling on a public highway because of an interest in the area. EXCLUDE - persons engaged in oil or other industry not directly related to the refuge, persons using refuge as most direct route or principal avenue of traffic, and those boating on navigable rivers or the Intercoastal Canal, unless they stop to observe wildlife on the refuge.

Computing visits. Where actual counts are impractical, "sampling" is used with midweek and week-end samples varied by season or weather. A conversion factor of 3.5 (of passengers per car) is used when accurate figures are not available. Each refuge will develop a conversion factor for boats based on range of usage. Count a camper once for each 24-hour period or fraction thereof.

Item 1a: Acres - of refuge open for each type of hunting.

Managed hunts require check in and out of hunters, issuance of permits, or assignment of blinds.

Other - INCLUDE crow, fox, and similar hunting.

Lands adjacent to refuge. Normally considered within 1 mile or less of boundary, unless established sampling procedures cover a wider area. For big game hunting, the distance may be greater.

Item 1b: Acres of streams open to fishing, if practical; otherwise just miles open. Information on "shores" is primarily for coastal fishing.

Item 1c: Recreation. INCLUDE photography, observing wildlife, picnicking, swimming, boating, camping, visitor center use, tours, etc. TOTAL Recreation, Official, and Economic Use visits under Item 1.

Industrial. INCLUDE persons engaged in industry, i.e., oil industry or factories. EXCLUDE these from Item 1.

Item 2: INCLUDE the "On Refuge" groups in Items 1c and 1. In "Off Refuge" column include only those group meetings in which refuge employees actually participate. EXCLUDE these from Items 1c and 1.

Item 3: Exhibits - INCLUDE displays, fairs, parades, and exhibits OFF the refuge; EXCLUDE those ON.

3-1758  
Form NR-8  
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING - 1964 Harvest

Refuge NATIONAL ELK REFUGE County TETON State WYOMING

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water- fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested		Unharvested				
			Acres	Bu./Tons	Acres	Bu./Tons			
Brome, Orchard Wheat grass -					3876	3876	- grass for elk pasturage		
							Fallow Ag. Land	80	

No. of Permittees: Agricultural Operations \_\_\_\_\_ Haying Operations \_\_\_\_\_ Grazing Operations \_\_\_\_\_

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
Hay crops at Morrison Row	2212	1006	None	1. <del>Barabara</del> Horse	23	276	900	23,791
Hay on refuge	1177	500	None	2. <del>Barabara</del> Horse	8000	23,000	None	23,791
Hay crops at refuge (roll-bales)	203	111	None	1. Total Refuge Acreage Under Cultivation				3976
Hay - Wild				2. Acreage Cultivated as Service Operation				3976



DIRECTIONS FOR PREPARING FORM NR-8  
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

# REFUGE GRAIN REPORT

Refuge National Elk Refuge

Months of January through April, 1964

(1) VARIETY*	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF				(6) ON HAND END OF PERIOD	(7) PROPOSED OR SUITABLE USE*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Oats	100	-	100	-	-	80	-	10		10	

(8) Indicate shipping or collection points \_\_\_\_\_

(9) Grain is stored at Refuge Grain Bins

(10) Remarks \_\_\_\_\_

\*See instructions on back.



## REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

**Report all grain in bushels.** For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.
- (4) A total of columns 2 and 3.
- (6) Column 4 less column 5.
- (7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters granary," etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

# REFUGE GRAIN REPORT

Refuge NATIONAL FLE REFUGE, JACKSON, MISSISSIPPI

Months of NOVEMBER through DECEMBER, 1964

(1) VARIETY*	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF				(6) ON HAND END OF PERIOD	(7) PROPOSED OR SUITABLE USE*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Wheat	0	200 bu.	200 bu.	-	-	46	154	154	-	154	-
Oats	30	313	343	-	313	10	323	20	-	20	-

(8) Indicate shipping or collection points The 200 bushel of wheat was received from Kirwin

(9) Grain is stored at Refuge grainary.

(10) Remarks Wheat fed to Trumpeter man, oats to work horses.

\*See instructions on back.

## REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

**Report all grain in bushels.** For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.
- (4) A total of columns 2 and 3.
- (6) Column 4 less column 5.
- (7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters granary," etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

3-1759  
Form NR-9

COLLECTIONS AND RECEIPTS OF PLANTING STOCK  
(Seeds, rootstocks, trees, shrubs)

Refuge NATIONAL ELK REFUGE Year 1964

Species	Collections				Receipts		Total Amounts on Hand	Amount Surplus
	Amount	Date or Period or Collection	Method	Unit Cost	Amount	Source		
NO COLLECTIONS DURING THE PERIOD!								



TIMBER REMOVAL

Refuge NATIONAL ELK REFUGE Year 1956

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B. F., ties, etc.	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
THERE WAS NO TIMBER REMOVAL DURING THE YEAR.								

Total acreage cut over..... Total income.....

No. of units removed B. F. .... Method of slash disposal.....

Cords.....

Ties.....

ANNUAL REPORT OF PESTICIDE APPLICATION

Proposal Number

Reporting Year

1964

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<p>AERIAL OR GROUND SPRAYING OF ALFALFA STANDS WAS NOT REQUIRED THIS SEASON (SUMMER - 1964)</p>								

10. Summary of results (continue on reverse side, if necessary)